

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Withdrawn) A method of producing a film of an yttria-alumina complex oxide, the method comprising the step of:  
spraying a mixed powder of powdery materials of yttria and alumina onto a substrate to produce a sprayed film composed of an yttria-alumina complex oxide.
2. (Withdrawn) The method of claim 1, wherein said powdery material of yttria has a 50 percent mean particle diameter of not smaller than 0.1  $\mu\text{m}$  and not larger than 100  $\mu\text{m}$ .
3. (Withdrawn) The method of claim 1, wherein said powdery material of alumina has a 50 percent mean particle diameter of not smaller than 0.1  $\mu\text{m}$  and not larger than 100  $\mu\text{m}$ .
4. (Withdrawn) The method of claim 1, comprising the step of subjecting said sprayed film to a heat treatment.
5. (Withdrawn) The method of claim 1, wherein said yttria-alumina complex oxide includes at least garnet phase.
- 6-8. (Cancelled).
9. (Currently Amended) A member effective for reducing particle generation and comprising a substrate and a surface layer on said substrate, wherein said surface layer has comprises a yttria-alumina complex oxide having an  $\alpha$  value calculated according to the following formula of not lower than in a range of 50 and not higher than to 700 calculated according to the following formula, wherein  $\alpha$  = (a specific surface area

measured by Krypton adsorption method ( $\text{cm}^2/\text{g}$ )  $\times$  (a thickness of said surface layer ( $\text{cm}$ ))  $\times$  (a bulk density of said surface layer ( $\text{g}/\text{cm}^3$ )); and

wherein said surface layer has an open porosity of at least 11 volume percent.

10. (Currently Amended) The member of claim 9, wherein the open porosity of said surface layer ~~has an open porosity of not lower than 10 volume percent and is~~ not higher than 30 volume percent.

11. (Currently Amended) The member of claim 9, wherein ~~said surface layer has a~~ ratio of ~~an~~ the open porosity to a closed porosity (open porosity/closed porosity) of said surface layer is not higher than 10.

12. (Currently Amended) The member of claim 9, wherein ~~said surface layer has a~~ pore diameter of main open pores of said surface layer is in a range of 0.05 to 50  $\mu\text{m}$ .

13. (Currently Amended) The member of claim 9, wherein said surface layer has a thickness of ~~not smaller than~~ at least 50  $\mu\text{m}$ .

14. (Currently Amended) The member of claim 9, wherein said surface layer is ~~made of~~ further comprises a material selected from the group consisting of an oxide containing a rare earth element, an oxide containing an alkaline earth element, a carbide, a nitride, a fluoride, a chloride, an alloy, a solid solution thereof and a mixture thereof.

15-16. (Cancelled).

17. (Currently Amended) The member of claim 9, wherein when said member is ~~to~~ be exposed to a corrosive substance ~~and~~, a material constituting said substrate has an

etching rate against said corrosive substance that is larger than that of a material constituting said surface layer.

18. (Original) The member of claim 17, wherein said corrosive substance is a halogen gas or a plasma of a halogen gas.

19. (Original) The substrate of claim 9, wherein said substrate is made of a material selected from the group consisting of alumina, spinel, yttria, zirconia and the complex oxide thereof.

20. (Currently Amended) The member of claim ~~15~~9, wherein said surface layer is a film ~~made of an yttria-alumina complex oxide, said film being formed by spraying a mixed powder of powdery materials of yttria and alumina on said substrate.~~

21. (Currently Amended) The member of claim 20, wherein ~~said powdery material of yttria has a 50 percent mean particle diameter of not smaller than said powdery material of yttria is in a range of 0.1  $\mu$ m and not larger than~~ said powdery material of yttria is in a range of 0.1  $\mu$ m and not larger than 100  $\mu$ m.

22. (Currently Amended) The member of claim 20, wherein ~~said powdery material of alumina has a 50 percent mean particle diameter of not smaller than said powdery material of alumina is in a range of 0.1  $\mu$ m and not larger than~~ said powdery material of alumina is in a range of 0.1  $\mu$ m and not larger than 100  $\mu$ m.

23. (Original) The member of claim 20, wherein said film is thermally treated.

24. (Original) The member of claim 20, wherein said yttria-alumina complex oxide includes at least garnet phase.

25. (Currently Amended) The member of claim 24, wherein said yttria-alumina complex oxide comprises ~~those of~~ garnet and perovskite phases, and wherein a ratio

YAL(420)/YAG(420) ratio is not lower than in a range of 0.05 and not higher than to 1.5, provided that said ~~ratio~~ YAL(420)/YAG(420) ratio is the ratio of a peak strength YAL (420) of the (420) plane of said perovskite phase to a peak strength YAG (420) of the (420) plane of said garnet phase, said peak strengths being measured by X-ray diffraction method.